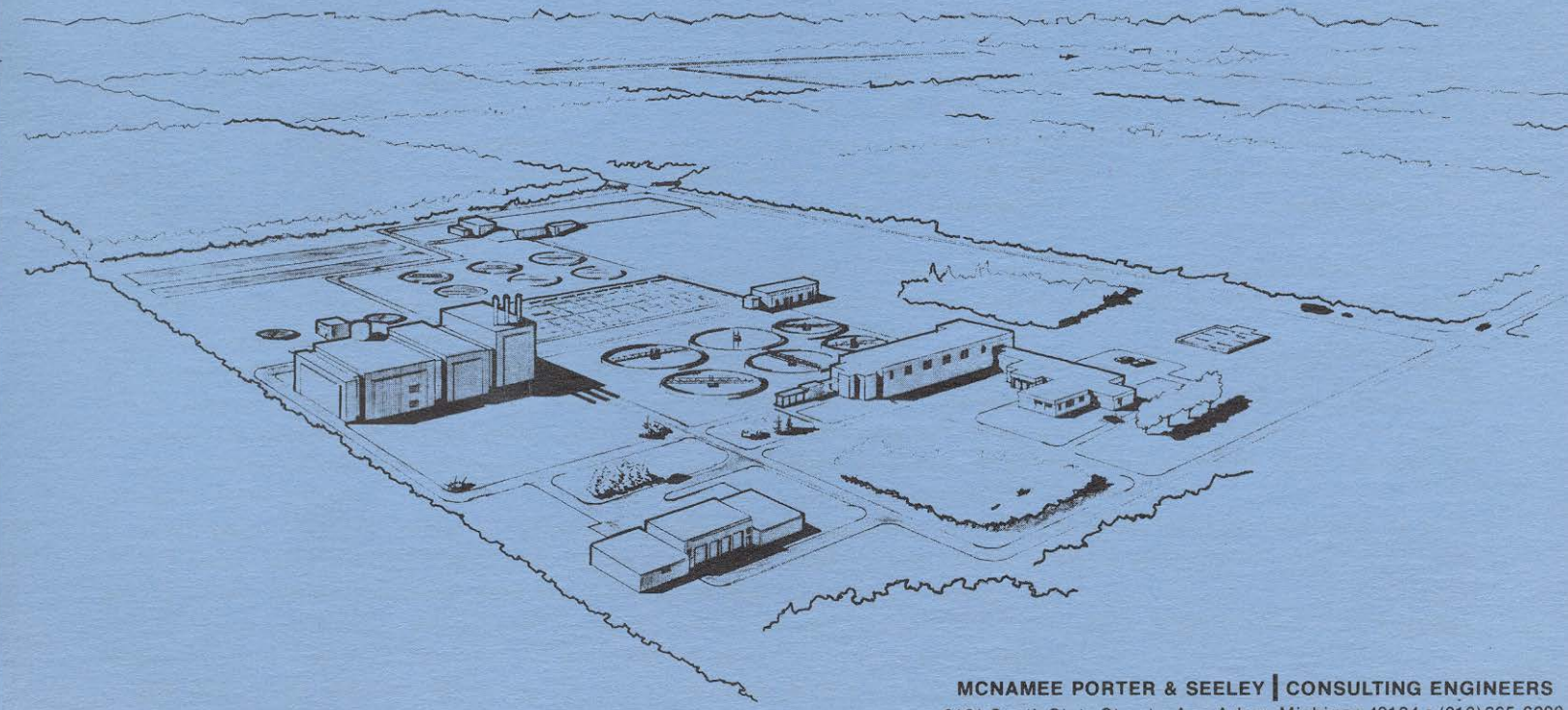
Ypsilanti Community Utilities Authority
WASTEWATER TREATMENT PLANT

Progress Tour:
October 4, 1981, 11:00 am.-5:00 p.m.



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The new YCUA treatment plant will be located west of Willow Run Airport in Ypsilanti Township. The location of the plant, namely elevation, dictates that all flows coming to the plant must be pumped.

To provide the pumped transmission of the wastewater to the treatment plant, four large pumping stations and 41,231 feet of 36-inch diameter pumping main are proposed as part of the entire system.

The wastewater treatment plant itself will consist of five separate and distinct levels of treatment as follows:

Pretreatment, primary treatment, secondary treatment, tertiary treatment and disinfection. A brief description of each treatment phase follows.

The primary purpose of pretreatment is to make the wastewater amenable to future treatment steps. After pumping the wastewater is screened to remove large solids. In grit removal, the next step, high density inorganic material is removed by gravity from the wastewater stream. To complete the pretreatment phase, provisions are included for up to 4 million gallons of diurnal flow and strength equalization. In addition to the diurnal equalization tankage an additional 11 million gallons of retention capacity will be available for longer duration rainfalls.

Primary treatment employs sedimentation under quiescent conditions for the removal of suspended material. Floating materials such as grease and oils will be skimmed from the liquid surface and removed. Chemical additions for phosphorus removal may be done in the primary tankage.

Secondary treatment at YCUA's wastewater treatment plant will be by combined carbon oxidation-nitrification employing the activated sludge process. In this process the organics in the wastewater are utilized by the bacterial population for energy and cell synthesis. A compressed air diffusion system provides an adequate oxygen supply for the bacteria.

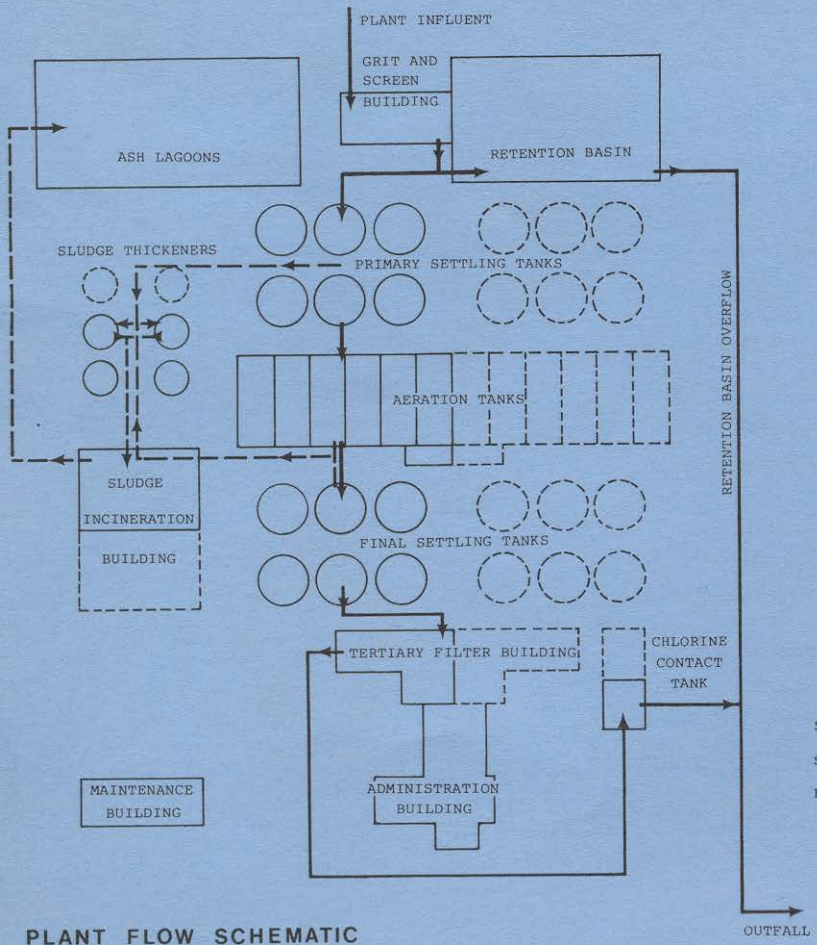
After aeration this mixture, called mixed liquor, is then settled in the final clarifiers. The solids settling out in the final tanks become the "activated sludge" that is returned to the head of the aeration tanks to start the biological cycle all over again.

After the activated sludge-nitrification process the wastewater receives advanced waste treatment in the form of tertiary sand filtration. The wastewater is pumped up to the top of the filters and flows by gravity down through the filtering media.

Disinfection of the wastewater is the destruction of the majority of the disease causing organisms. In this case the disinfection process is done by chlorination.

The sludge handling facilities are gravity sludge thickeners, chemical conditioning and plate and frame filter presses. Sludge cake from the presses will be incinerated or landfilled.

The advanced wastewater treatment plant at YCUA will provide a very high degree of treatment, consistent with federal and state water quality standards, to a design flow of 29 million gallons per day.



PLANT FLOW SCHEMATIC

YPSILANTI COMMUNITY UTILITIES AUTHORITY

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JOSEPH W. PRICE ..... *Director*

Contract Number	Contractor
77-S-1	Darin and Armstrong, Inc.
77-S-2	
Division A	Smith and Andrews Construction Co.
Division B	Smith and Andrews Construction Co.
Division C	Smith and Andrews Construction Co.
Division D	Smith and Andrews Construction Co.
77-S-3	
Division A	Busch, Inc.
Division B	Mole Construction Co., Inc.
Division C	Douglas N. Higgins, Inc.
Division D	Douglas N. Higgins, Inc.
Division E	A & P Construction Co.